

16. (Amended) The method of claim 15 wherein treating the cloth with the second substance comprises [the step of] treating the cloth with a phenolic resin.

17. (Amended) The method of claim 14 wherein treating the cloth with the second substance comprises [the step of] treating the cloth with a phenolic resin.

18. (Amended) The method of claim 2 or 3 wherein making electrical contact to the moving coil of the transducer through the electrical conductor wrapped around the thread comprises [the step of] applying a conductive adhesive to at least one of the electrical conductor wrapped around the thread and a lead of the moving coil.

19. (Amended) The method of claim 4 wherein making electrical contact to the moving coil of the transducer through the electrical conductor wrapped around the thread comprises [the step of] applying a conductive adhesive to at least one of the electrical conductor wrapped around the thread and a lead of the moving coil.

REMARKS

Clean copies of the amendments made hereby are enclosed herewith.

The Examiner requested that the status of related applications be updated to reflect that the parent application has now issued as a patent. An appropriate amendment has been made hereby.

The Examiner objected to the abstract submitted August 6, 2001. A substitute abstract is submitted herewith on a separate page.

The Examiner objected to the title. An appropriate amendment to the title has been made hereby.

The Examiner rejected claims 1-19 under 35 U. S. C. §112, second paragraph. The Examiner identified specific instances of perceived indefiniteness in the claims. By amendments contained herein, a good faith effort has been made to address those specifically identified instances of perceived indefiniteness. Applicants submit that the 35 U. S. C. §112, second paragraph rejection is overcome by these amendments.

The Examiner rejected claims 1-5 under 35 U. S. C. §102. The Examiner relied upon published European patent application 0369434 (hereinafter EP '434) to support this rejection. The Examiner takes the position that EP '434 teaches "a method of making a moving coil transducer comprising: selecting a cloth 1 from which the spider is to be woven; wrapping a

selected thread 3 with an electrical conductor 2; and weaving the wrapped thread in the cloth,” directing Applicants’ attention particularly to Fig. 5A of EP ‘434.

Regarding claim 2, the Examiner takes the position that “EP ‘434 suggests that the cloth is formed into a spider (damper), which is incorporated into a moving coil transducer or loudspeaker assembly,” directing Applicants’ attention particularly to EP ‘434, col. 1, lines 15 *et seq.*

Regarding claim 3, the Examiner takes the position that “the claimed ‘float’ is broadly read as the portion of the wrapped thread 3 that extends above the conductor 2 and cloth 2,” directing Applicants’ attention to Fig. 5B of EP ‘434.

Regarding claims 4 and 5, the Examiner takes the position that EP ‘434 teaches “wrapping multiple conductors and multiple threads and twisting the multiple wrapped threads,” directing Applicants’ attention to EP ‘434, Figs. 7A and 7B.

EP ‘434

EP ‘434 describes a number of different methods for attaching conductors to a spider.

EP ‘434 provides, in pertinent part:

“As shown in Fig. 2, after the conductive member was adhered onto the damper raw material comprising the cloth material such as woven cloth, unwoven cloth, or the like by using an adhesive agent, they are allowed to pass in a treating bath in which a thermosetting resin such as a phenol resin or the like which was diluted by a solvent is enclosed, thereby impregnating the thermosetting resin into the damper raw material. Then, the solvent is evaporated and the resin tackiness is eliminated. In this state, the damper is thermally molded with a molding die.” EP ‘434, col. 1, ll. 34-45.

“The thermosetting resin which was diluted by a solvent is impregnated into the damper raw material comprising the cloth material. The solvent is evaporated and the resin tackiness is eliminated. In this state, the conductive members are adhered and, thereafter, the damper is thermally molded.” EP ‘434, col. 1, ll. 46-52.

“The thermosetting resin which was diluted by a solvent is impregnated into the damper raw material comprising the cloth material. The solvent is evaporated and the resin tackiness is eliminated. In this state, the damper is thermally molded to obtain a damper main body. The conductive members comprising copper foils or woven wires are adhered onto the upper or back surface of the corrugation.” EP ‘434, col. 1, l. 53-col. 2, l. 6.

"[T]here has been known a method whereby the material of the conductive members is divided into two portions at the intermediate position and both of the inner and outer peripheral portion sides are made free or a method whereby the conductive members such as not to generate any crack are arranged. However, the former method has a drawback such that the fairly large number of steps are needed. The latter method has a drawback such that after completion of the molding, internal stresses remain in the conductive members and the conductive members are easily deformed." EP '434, col. 4, ll. 9-21.

"Hitherto, a woven wire has been used as conductive wire members. As is well known, the woven wire is formed in a manner such that a copper foil is wound around the twisted fiber and one thin wire-shaped line raw material is formed and a proper number of such line raw materials are selected as necessary and are woven. Therefore, since the copper foil of the woven wire is formed as a continuous spiral shape, the woven wire has a function such that even when the woven thread wire is largely bent, the copper foil can move in conformity with the bent state. Due to this, the wire material is flexible and bending stresses are hardly applied to the copper foil, so that the wire-cut resistance by the metal fatigue is extremely high. Consequently, the woven wire is most frequently used as a conductive material of the speaker which needs the flexibility and vibration resistance.

However, the conventional ordinary woven wire also inevitably has an inconvenience such that cracks are generated due to the vibration of the damper. As shown in Fig. 4, since the copper foils in the adhesive portion of the woven wire attached along the corrugations are fixed to the damper 1, the movable portions of the copper foils can move only on the opposite side of the adhesive portion, that is, only on the upper side in the diaphragm. Only about half of the inherent capability of the woven wire can be effected. Thus, if the severer conditions are set, the fixed portions of the copper foils, that is, the adhesive portions with the damper cannot help deforming in conformity with the amplitude of the damper, so that there is a fear such that cracks are finally generated due to the metal fatigue and the wire is cut out." EP '434, col. 4, ll. 9-56.

"In Fig.5A, reference numeral 1 denotes the damper main body. A thermosetting resin such as a phenol resin or the like which was diluted by a solvent is impregnated into a damper raw material comprising a cloth material such as woven cloth, unwoven cloth, or the like. The solvent is evaporated to eliminate the resin tackiness. In this state the damper material is molded by thermal molding dies and concentric wave-shaped corrugations are integrally formed. In this manner, the damper main body 1 is formed. * * *

In the first embodiment, the conductive members 2 are sewed to the damper main body 1 * * * .

In the second embodiment, as shown in Fig. 6A, the damper raw material comprising the above cloth material is allowed to pass in the treating bath in which the thermosetting resin such as phenol resin or the like which was diluted by a solvent is stored, thereby impregnating the thermosetting resin into the damper raw material. The solvent is evaporated and the resin tackiness is eliminated. In this state, the conductive members 2 are sewed to the damper raw

material 1 by using a fiber (thread) 3. Such a sewing step can be easily realized by an industrial sewing machine 4.” EP ‘434, col. 6, ll. 6-38.

“Further, in the method of manufacturing speaker damper of the invention, after the conductive members were sewed by a fiber to the damper raw material from which the resin tackiness had been eliminated, the damper material is thermally molded and the damper is manufactured. Therefore, the insulative resin is not adhered to the conductive members. The step of eliminating the insulative resin adhered to the conductive members or the like as in the conventional one is unnecessary.” EP ‘434, col. 7, ll. 18-28.

“As another measure according to the invention, there is used a structure of the conductive members such that even if the conductive members are adhered to the damper surface, the conductive members can be shifted for the damper surface.

The woven wire of the conductive member structure is formed in the following manner as shown in Fig. 7A. That is, two sheets of conductive foils (copper foils) 12a and 12b are overlaid and wound around twisted fibers 11 and one thin wire-shaped line raw material 10 is formed. A proper number of such wire raw materials 10 are selected and woven. In this manner, the woven wire is formed. Therefore, the inner and outer conductive foil layers 12a and 12b of the wire raw materials constructing the woven wire can be slightly shifted from each other.

In the embodiment, as shown in Fig. 7B, a flat net-shaped woven wire 20 which is formed by weaving the wire raw materials 10 like a flat net shape is used. Fig. 7C shows an embodiment in which the flat net-shaped woven wire 20 is molded so as to be adhered to the damper 1 by either one of the damper manufacturing methods of the conventional techniques. Fig. 5 shows an embodiment in which after the flat net-shaped woven wire 20 was sewed to the damper raw material 1 by using a thread 3, corrugations are formed by thermally pressing and molding them.” EP ‘434, col. 7, l. 44-col. 8, l. 14.

“The above-mentioned woven wire around which the conductive foils were overlaid and wound is used as conductive members, such conductive members are sewed to the damper, and they are molded by using the dies mentioned above. Due to this, many conventional problems regarding the conductive members which are attached to the damper are solved.” EP ‘434, col. 9, ll. 38-45.

The Law of Anticipation Under 35 U. S. C. § 102

Anticipation of a claim under 35 U. S. C. § 102 can be found only if the prior art reference discloses every element of the claim. *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 1457, 221 USPQ 481, 485 (Fed. Cir. 1984); *In re King*, 801 F.2d 1324, 1326, 231 USPQ 136, 138 (Fed. Cir. 1986).

Comparison of the Teachings of EP ‘434 to Claims 1-5

From the above-quoted passages from EP '434, it is clear that EP '434 neither discloses nor suggests, for example, claim 1's method of making a woven spider comprising selecting a thread of a cloth from which the spider is to be woven, wrapping the selected thread with an electrical conductor and weaving the wrapped thread at a selected location in the cloth.

From the above-quoted passages from EP '434, it is clear that EP '434 neither discloses nor suggests, for example, claim 2's method of making a moving coil transducer comprising wrapping a thread with an electrical conductor and weaving the wrapped thread at a selected location in the cloth, after weaving the wrapped thread at the selected location in the cloth, forming the cloth into a spider, incorporating the spider into the moving coil transducer and making electrical contact to the moving coil of the moving coil transducer through the electrical conductor wrapped around the thread.

From the above-quoted passages from EP '434, it is clear that EP '434 neither discloses nor suggests, for example, claim 3's method of making a moving coil transducer comprising wrapping a thread with an electrical conductor and weaving the wrapped thread at a selected location in the cloth with a float, after weaving the wrapped thread at the selected location in the cloth, forming the cloth into a spider with a region of the cloth adjacent the float as a perimeter of the spider, incorporating the spider into the moving coil transducer and making electrical contact to the moving coil of the moving coil transducer through the electrical conductor wrapped around the thread.

From the above-quoted passages from EP '434, it is clear that EP '434 neither discloses nor suggests, for example, claim 4's method of making a moving coil transducer comprising wrapping multiple threads with multiple electrical conductors and weaving the multiple wrapped threads at a single shed or course in the cloth with a float, after weaving the multiple wrapped threads at the selected location in the cloth, forming the cloth into a spider with a region of the cloth adjacent the float as a perimeter of the spider, incorporating the spider into the moving coil transducer and making electrical contact to the moving coil of the moving coil transducer through the multiple electrical conductors wrapped around the multiple threads.

From the above-quoted passages from EP '434, it is clear that EP '434 neither discloses nor suggests, for example, claim 5's method of making a moving coil transducer comprising wrapping multiple threads with multiple electrical conductors and weaving the multiple wrapped threads at a single shed or course in the cloth with a float, after wrapping

multiple threads with electrical conductors and before weaving the multiple wrapped threads at a single shed or course in the cloth, twisting the multiple wrapped threads together, after weaving the multiple wrapped threads at the selected location in the cloth, forming the cloth into a spider with a region of the cloth adjacent the float as a perimeter of the spider, incorporating the spider into the moving coil transducer and making electrical contact to the moving coil of the moving coil transducer through the multiple electrical conductors wrapped around the multiple threads.

Accordingly, the rejection of claims 1-5 under 35 U. S. C. §102 based upon EP '434 is overcome.

The Examiner rejected claims 1-3 under 35 U. S. C. §102. The Examiner relied upon published European patent application 0479317 (hereinafter EP '317) to support this rejection. The Examiner takes the position that EP '317 teaches "a method of making a moving coil transducer comprising: selecting a cloth 1F from which the spider is to be woven; wrapping a selected thread H with an electrical conductor 2 H; and weaving the wrapped thread in the cloth (shown in Fig. 9).

Regarding claim 2, the Examiner takes the position that EP '317 "suggests that the cloth is formed into a spider, which is incorporated into a moving coil transducer or loudspeaker assembly," directing Applicants' attention to EP '317, Fig. 6.

Regarding claim 3, the Examiner takes the position that "the claimed 'float' is read as the portions of the wrapped thread 2c exposed above or overshooting the cloth," directing Applicants' attention to EP '317, Fig. 9.

EP '317

In EP '317, a woven strip of cloth 1 is first immersed in a dip tank containing a thermosetting resin 3 such as phenol diluted with solvent to impregnate the cloth. A sufficient portion of the solvent is then driven off to make the damper raw material 1F semi-dry. EP '317, col. 4, lines 26-34.

Next, a copper foil having a width of about .3mm and a thickness of about .02mm is wound on a central thread made of two twisted, meta-based aramid fibers. Thirteen of these are then knitted into a flat tinsel wire 2H which is about 3mm wide and about .6mm thick. EP '317, col. 4, lines 35-44. Two of these flat tinsel wires 2H are then *sewed* in parallel to the semi-dry damper raw material using a meta-based aramid thread. EP '317, col. 4, lines 44-49.

Emphasis Applicants’.

After the flat knitted tinsel wires 2H are sewn to the semi-dry damper raw material 1F, creamy solder CH is silk screen printed or otherwise deposited onto the end portions of the flat knitted tinsel wires 2H to prepare them for subsequent connection in an electrical circuit. EP ‘317, col. 4, line 56-col. 5, line 16. After the knitted tinsel wires 2H are sewn to the semi-dry damper raw material 1F, the semi-dry damper raw material is subjected to heat (~250°C) and pressure in a metal damper mold K to form the corrugated (11) damper F. During this step, the semi-dry damper raw material 1F is thermoset (3), the flat knitted tinsel wires 2H are molded to the damper F and the creamy solder CH flows to tin the ends of the flat knitted tinsel wires 2H. EP ‘317, col. 5, lines 17-32.

In another embodiment according to EP ‘317, yarn 12(12F) is impregnated by passing it through a bath of a thermosetting resin 3 diluted by solvent. The impregnated yarn 12(12F) is then passed through an oven OB to remove some or all of the solvent. The finished yarn 12X is used to make the woven cloth. A predetermined number of copper wires 2C or tinsel wires 2B are interleaved into the woven cloth at predetermined positions as its warp 12a or weft 12b. The copper wires 2C or tinsel wires 2B form the loudspeaker’s conductors. EP ‘317, col. 5, line 48-col. 6, line 1.

From the above explanation provided by EP ‘317, it is clear that EP ‘317 neither discloses nor suggests, for example, claim-1’s method of making a woven spider comprising selecting a thread of a cloth from which the spider is to be woven, wrapping the selected thread with an electrical conductor and weaving the wrapped thread at a selected location in the cloth.

From the above explanation provided by EP ‘317, it is clear that EP ‘317 neither discloses nor suggests, for example, claim 2’s method of making a moving coil transducer comprising wrapping a thread with an electrical conductor and weaving the wrapped thread at a selected location in the cloth, after weaving the wrapped thread at the selected location in the cloth, forming the cloth into a spider, incorporating the spider into the moving coil transducer and making electrical contact to the moving coil of the moving coil transducer through the electrical conductor wrapped around the thread.

From the above explanation provided by EP ‘317, it is clear that EP ‘317 neither discloses nor suggests, for example, claim 3’s method of making a moving coil transducer comprising wrapping a thread with an electrical conductor and weaving the wrapped thread at a

selected location in the cloth with a float, after weaving the wrapped thread at the selected location in the cloth, forming the cloth into a spider with a region of the cloth adjacent the float as a perimeter of the spider, incorporating the spider into the moving coil transducer and making electrical contact to the moving coil of the moving coil transducer through the electrical conductor wrapped around the thread.

Accordingly, the rejection of claims 1-3 under 35 U. S. C. §102 based upon EP '317 is overcome.

The Examiner rejected claims 18/2/1, 18/3/2/1 and 19 under 35 U. S. C. §103. The Examiner relied upon the combination of EP '434 and published Japanese patent application 5-85196 (hereinafter JP '196) to support this rejection. The Examiner relies upon EP '434 to teach conductive adhesives, but concedes that what EP '434 teaches about conductive adhesives is that they might be disadvantageous, directing Applicants' attention to EP '434, col. 7, lines 30 *et seq.* The Examiner relies upon JP '196 to teach "use of a conductive adhesive for the specific purpose of electrically connecting wrapped threads to conductive leads," directing Applicants' attention to the English translation of JP '196, page 25. The Examiner concludes that it would have been obvious at the time of Applicants' invention to have modified EP '434 by applying conductive adhesive as the Examiner believes is taught by JP '196 to connect the wrapped threads to conductive leads in the moving coil transducer.

JP '196

JP '196 discloses flat woven gold threads 22, 23, 29a, woven into a damper cloth. Referring to Fig. 16 of JP '196, a pair of flat-knit gold threads (22) (23) are woven into the damper in parallel to the center line. The inner ends of the flat-knit gold threads (22) (23) are respectively soldered to copper leaves (19) (20) of a coil bobbin (3) with solder (15). Then, the inner periphery of the damper (8) and the outer periphery of the coil bobbin (3) are attached to each other with adhesives (24). The adhesion is conducted after the coil bobbin (3) and the damper (8) are placed in a proper position, with the adhesives sprayed from a nozzle to the attaching corner of the damper (8) and coil bobbin (3) while they are rotated. The outer periphery of the damper (8) is fixed to a frame (9). The outer ends of the flat-knit gold threads (22) (23) are connected to an input terminal (13). The damper (8) illustrated in Fig. 1 of JP '196 is a conventional damper having corrugations. The corrugations are formed on the damper by

heat-processing a cloth that has been pre-soaked in a thermohardening resin such as phenol. A pair of flat-knit gold threads (22)(23) are woven into the damper (8) in parallel to the center line of the damper (8) illustrated in Figs. 1 and 3(b) of JP '196. The flat-knit gold threads which run toward the inner periphery of the damper (8) are soldered onto the copper leaves (19)(20) on the coil bobbin (3) with solder (15). The damper (8) has a pair of flat-knit gold threads (22)(23) woven on it in parallel with the center line of the damper. The terminals (22a)(23a) at the inner end of the flat-knit gold threads (22)(23) are soldered, as illustrated in detail in Figs. 9(c) and 10 of JP '196, to the connecting points (19b)(34b) of the copper leaves (19)(34) respectively. The terminals (22b)(23b) at the outer side of the flat-knit gold threads (22)(23) are soldered to lugs (13a)(13b), which are the input terminals of a woofer.

The Law of Obviousness Under 35 U. S. C. § 103

In examining the differences between prior art and the claimed invention, the Examiner must not only interpret the claim language, but must consider both the invention and the prior art references *as a whole*. *W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1550, 220 U.S.P.Q. 303 (Fed. Cir. 1983). In making its determination, a court must view the prior art without reading into that art the patent's teachings, and must analyze and consider the references as a whole. *Vandenberg v. Dairy Equip. Co.*, 740 F.2d 1560, 1564, 224 U.S.P.Q. 195 (Fed. Cir. 1984). It is therefore improper for the Examiner to reject claims under 35 U.S.C. § 103 based on modifications to a prior art reference without considering what that reference *as a whole* suggested or disclosed.

In *In re Gordon*, simply inverting a prior art device clearly rendered the invention at issue obvious. In nevertheless finding the invention non-obvious, the Federal Circuit Court of Appeals stated: "The question is not whether a patentable distinction is created by viewing a prior art apparatus from one direction and a claimed apparatus from another, but, rather, whether it would have been obvious from a fair reading of the prior art reference *as a whole* to turn the prior art apparatus upside down." 733 F.2d 900, 902, 221 U.S.P.Q. 1125 (Fed. Cir. 1984). Emphasis Applicants'.

Under Federal Circuit Court of Appeals precedent, it is therefore impermissible to consider selected features of EP '434 or JP '196 without regard for what each of these references discloses as a whole:

“It is impermissible within the framework of section 103 to pick and choose from any one reference only so much of it as will support a given position to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one skilled in the art.”

Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc., 796 F.2d 443, 230 U.S.P.Q. 416, 419 (Fed. Cir. 1986) (quoting *In re Wesslau*, 353 F.2d 238, 241, 147 U.S.P.Q. 391, 393 (C.C.P.A. 1965)).

Distinguishing the Claims Over JP ‘196

JP ‘196 does not disclose, nor does it suggest, for example, claim 18/2’s method of making a moving coil transducer comprising wrapping a thread with an electrical conductor and weaving the wrapped thread at a selected location in the cloth, after weaving the wrapped thread at the selected location in the cloth, forming the cloth into a spider, incorporating the spider into the moving coil transducer and applying a conductive adhesive to at least one of the electrical conductor wrapped around the thread and a lead of the moving coil to make electrical contact to the moving coil of the moving coil transducer through the electrical conductor wrapped around the thread..

JP ‘196 does not disclose, nor does JP ‘196 suggest, claim 18/3/2’s method of making a moving coil transducer comprising wrapping a thread with an electrical conductor and weaving the wrapped thread at a selected location in the cloth with a float, after weaving the wrapped thread at the selected location in the cloth, forming the cloth into a spider with a region of the cloth adjacent the float as a perimeter of the spider, incorporating the spider into the moving coil transducer and applying a conductive adhesive to at least one of the electrical conductor wrapped around the thread and a lead of the moving coil to make electrical contact to the moving coil of the moving coil transducer through the electrical conductor wrapped around the thread.

JP ‘196 does not disclose, nor does JP ‘196 suggest, claim and 19’s method of making a moving coil transducer comprising wrapping multiple threads with multiple electrical conductors and weaving the multiple wrapped threads at a single shed or course in the cloth with a float, after weaving the multiple wrapped threads at the selected location in the cloth, forming

the cloth into a spider with a region of the cloth adjacent the float as a perimeter of the spider, incorporating the spider into the moving coil transducer and applying a conductive adhesive to at least one of the electrical conductor wrapped around the thread and a lead of the moving coil to make electrical contact to the moving coil of the moving coil transducer through the multiple electrical conductors wrapped around the multiple threads.

EP '434 does not disclose, nor does EP '434 suggest, for example, claim 18/2's method of making a moving coil transducer comprising wrapping a thread with an electrical conductor and weaving the wrapped thread at a selected location in the cloth, after weaving the wrapped thread at the selected location in the cloth, forming the cloth into a spider, incorporating the spider into the moving coil transducer and applying a conductive adhesive to at least one of the electrical conductor wrapped around the thread and a lead of the moving coil to make electrical contact to the moving coil of the moving coil transducer through the electrical conductor wrapped around the thread..

EP '434 does not disclose, nor does EP '434 suggest, claim 18/3/2's method of making a moving coil transducer comprising wrapping a thread with an electrical conductor and weaving the wrapped thread at a selected location in the cloth with a float, after weaving the wrapped thread at the selected location in the cloth, forming the cloth into a spider with a region of the cloth adjacent the float as a perimeter of the spider, incorporating the spider into the moving coil transducer and applying a conductive adhesive to at least one of the electrical conductor wrapped around the thread and a lead of the moving coil to make electrical contact to the moving coil of the moving coil transducer through the electrical conductor wrapped around the thread.

EP '434 does not disclose, nor does EP '434 suggest, claim and 19's method of making a moving coil transducer comprising wrapping multiple threads with multiple electrical conductors and weaving the multiple wrapped threads at a single shed or course in the cloth with a float, after weaving the multiple wrapped threads at the selected location in the cloth, forming the cloth into a spider with a region of the cloth adjacent the float as a perimeter of the spider, incorporating the spider into the moving coil transducer and applying a conductive adhesive to at least one of the electrical conductor wrapped around the thread and a lead of the moving coil to make electrical contact to the moving coil of the moving coil transducer through the multiple electrical conductors wrapped around the multiple threads.

Since neither of the references the Examiner is relying upon discloses the above-noted elements, the combination of the two cannot fairly be said to disclose or suggest the above-noted elements. Therefore, the rejection of claims 18/2, 18/3/2 and 19 under under 35 U. S. C. §103 based upon the combination of EP '434 and JP '196 is overcome.

Accordingly, Applicants submit that their claims as amended herein are entitled to further favorable consideration, culminating in allowance. Such action is respectfully requested.

Applicants hereby petition for a one month extension of the term for response from August 21, 2002 until September 21, 2002. The \$110.00 fee for this extension of time is enclosed. The Commissioner is hereby authorized to charge any additional fees which may be required to constitute this a timely response, or credit any overpayment, to Applicants' undersigned counsel's deposit account 10-0435. A duplicate copy of this authorization is enclosed for this purpose.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Richard D. Conard", with a large checkmark drawn over the end of the signature.

Richard D. Conard
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317-231-7285

Clean copy of the title:
METHOD OF MAKING A LOUDSPEAKER

Clean copy of amendment to the specification

This is a division of U. S. S. N. 08/755,578 filed November 13, 1996, now U. S.

B1 Patent 6,269,167. U. S. S. N. 08/755,578 is itself a continuation of U. S. S. N. 08/219,117, now abandoned.

Sub 217
Clean copies of the amended claims

1. (Amended) A method of making a woven spider comprising selecting a thread of a cloth from which the spider is to be woven, wrapping the selected thread with an electrical conductor and weaving the wrapped thread at a selected location in the cloth.

B2
2. (Amended) A method of making a moving coil transducer comprising wrapping a thread with an electrical conductor and weaving the wrapped thread at a selected location in a cloth, after weaving the wrapped thread at the selected location in the cloth, forming the cloth into a spider, incorporating the spider into the moving coil transducer and making electrical contact to (the moving coil) of the moving coil transducer through the electrical conductor wrapped around the thread.

3. (Amended) The method of claim 2 wherein weaving the wrapped thread at the selected location in the cloth comprises weaving the wrapped thread at the selected location with a float, and forming the cloth into a spider comprises forming a region of the cloth adjacent the float as a perimeter of the spider.

B3
4. (Twice amended) The method of claim 3 wherein wrapping the selected thread with the electrical conductor comprises wrapping multiple threads with multiple electrical conductors and weaving the wrapped thread at the selected location comprises weaving the multiple wrapped threads at a single shed or course in the cloth.

B4
5. (Amended) The method of claim 4 and further comprising, after wrapping multiple threads with electrical conductors and before weaving the multiple wrapped threads at a single shed or course in the cloth, twisting the multiple wrapped threads together.

B5
6. (Twice amended) The method of claim 3 and further comprising, after wrapping the selected thread with an electrical conductor and before weaving the wrapped thread at the selected location in the cloth, treating the wrapped thread with a first substance to render the wrapped thread relatively impervious to a second substance, and then, after weaving the wrapped thread at the selected location in the cloth, treating the cloth with the second substance.

B6
7. (Amended) The method of claim 6 wherein treating the wrapped thread with a first substance comprises treating the wrapped thread with a wax.

8. (Amended) The method of claim 7 wherein treating the cloth with the second substance comprises treating the cloth with a phenolic resin.

9. (Amended) The method of claim 6 wherein treating the cloth with the second substance comprises treating the cloth with a phenolic resin.

10. (Amended) The method of claim 4 and further comprising, after wrapping the multiple threads with multiple electrical conductors and before weaving the wrapped threads at the selected location in the cloth, treating the wrapped threads with a first substance to render the wrapped threads relatively impervious to a second substance, and then, after weaving the wrapped threads at the selected location in the cloth, treating the cloth with the second substance.

11. (Amended) The method of claim 10 wherein treating the wrapped threads with a first substance comprises treating the wrapped threads with a wax.

B6 12. (Amended) The method of claim 11 wherein treating the cloth with the second substance comprises treating the cloth with a phenolic resin.

13. (Amended) The method of claim 10 wherein treating the cloth with the second substance comprises treating the cloth with a phenolic resin.

14. (Amended) The method of claim 5 and further comprising, after wrapping the multiple threads with electrical conductors and before weaving the wrapped threads at the selected location in the cloth treating the wrapped threads with a first substance to render the wrapped threads relatively impervious to a second substance, and then, after weaving the wrapped threads at the selected location in the cloth, treating the cloth with the second substance.

15. (Amended) The method of claim 14 wherein treating the wrapped threads with a first substance comprises treating the wrapped threads with a wax.

16. (Amended) The method of claim 15 wherein treating the cloth with the second substance comprises treating the cloth with a phenolic resin.

17. (Amended) The method of claim 14 wherein treating the cloth with the second substance comprises treating the cloth with a phenolic resin.

Sub DS 7 18. (Amended) The method of claim 2 or 3 wherein making electrical contact to the moving coil of the transducer through the electrical conductor wrapped around the thread comprises applying a conductive adhesive to at least one of the electrical conductor wrapped around the thread and a lead of the moving coil.

19. (Amended) The method of claim 4 wherein making electrical contact to the moving coil of the transducer through the electrical conductor wrapped around the thread

B6 comprises applying a conductive adhesive to at least one of the electrical conductor wrapped around the thread and a lead of the moving coil.
